

Introduction to S.E.E.



***Tractor Wheeled 4X4 DED SEE
FLU 419***

CONDITION: Given a briefing on the proper operating techniques of the Small Emplacement Excavator

STANDARDS: Students must demonstrate knowledge of the Small Emplacement Excavator (SEE) techniques by answering questions on:

- (a) The safety requirements of the SEE tractor**
- (b) PMCS**
- (c) Location and purpose of controls**
- (d) Operation of the SEE tractor**

Safety Requirements: Hard hats and hearing protection will be worn.

Risk Assessment Level: Low

Environmental Considerations: No major considerations

Nomenclature

Tractor Wheeled 4x4 DED SEE FLU 419

4x4 - Four Wheel Drive

DED - Diesel Engine Driven

SEE - Small Emplacement Excavator

FLU - Freight Liner Utility

419 - Model Number



- **Prepares Excavation For:**
 - **Individual Fighting Positions**
 - **Crews Served Weapons Positions**
 - **Artillery & Missile Positions & Trenches**
 - **Foundations (Flat Bottom Ditches)**
- **Maintains Support for Forward Elements**



Runway Sweeper



Snow Plow



Other Attachments

- **Runway Sweeper**
- **Snow Remover (Snow Blower)**
- **Forks**
- **Tamper**
- **Auger**

Capabilities

- ✓ **Fording Depth**
 - ✓ 30 inches
- ✓ **Ground Clearance**
 - ✓ 17 inches
- ✓ **Transportable Weight**
 - ✓ 15,750 Lbs
- ✓ **Speeds**
 - ✓ Improved - 50 MPH
 - ✓ Unimproved - 5 MPH / 8 KPH

Limitations

- Uphill/Downhill 60%
- Sideslope 30%
- Max Trailer Weight
 - 17,000 Lbs
- Turning Radius
 - 35 Ft 8 In



Review

- **Nomenclature**
- **Purpose**
- **Attachments**
- **Capabilities**
- **Limitations**

Front Bucket

- ✓ **Manufactured by Schmidt**
- ✓ **3/4 CuYd capacity**
- ✓ **Travel locks used from jobsite to jobsite**
- ✓ **Carried 18" above ground, Rolled back**



Front Bucket

- Will lift 3,300 Lbs
- 98" Loading Height



4 Main Capabilities of the Front Bucket

- **LOADING**
- **LIFTING**
- **BACKFILLING**

ROUGH GRADING / LEVELING



- 
- ✓ **Diesel Fuel**
 - ✓ **30 Gal capacity**
 - ✓ **16 hours w/ backhoe**
 - ✓ **250 miles**

Fuel Tank

Front Hydraulic Tank

44 Qt OE 10w oil

"V" Belt Driven

Powers Front Bucket & Hyd Tools



Hydraulic Hose Reel

- ✓ 33 Feet of hose
- ✓ Quick Disconnects



Hydraulic Oil Cooler

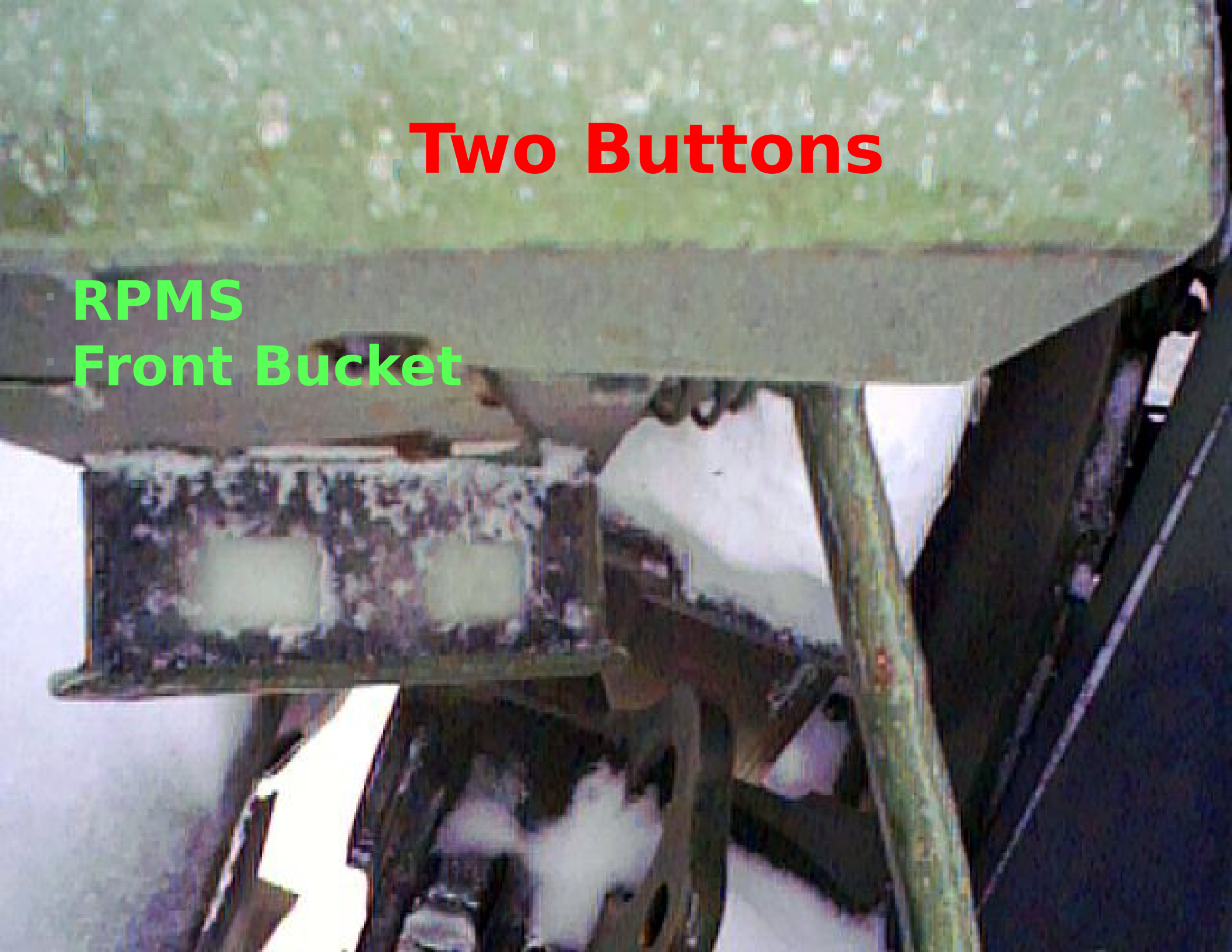
- Two 10" fans
- Aluminum Fins



Two Buttons

RPMS

Front Bucket



Batteries

- **Double Lock Secured**
- **Mounted for easy Maintenance**
- **24 Volt Neg. Ground System**

Air Tanks

- Two Air Tanks
- Three Drain Cocks
- Drain Largest to Smallest



Air Hose

- ✓ 25 ft
- ✓ Nylon



Storage Compartment

- ✓ Used to hold Hydraulic Tools
- ✓ Keep Clean of debris
- ✓ Oil Can Maintenance

Hydraulic Tools

Hammer Drill

48 Lbs

3 bits

3/4 x

18"

1 x 24"

2 x 24"

Pavement Breaker

72 lbs

3 bits

Moil

Point

3"

Chisel

5.5"

Spade

Chain Saw

7 lbs

15"

bar

Self

Oiling

Backhoe

- Manufactured by J.I. Case
 - Components
 - Stabilizers
 - Boom
 - Dipper
 - Bucket
- 
- A photograph of a backhoe loader, likely a J.I. Case model, with its boom and bucket raised. The machine is parked on a dirt or gravel surface. The background shows a clear blue sky and some distant structures. The text is overlaid on the left side of the image.

Capabilities

- 10,000 Lbs Digging Force
- 14 Ft Digging Depth
- 180 Degree Swing Arc
- 17 Ft 8 In Digging Radius
- 7 CuFt Bucket Capacity
- 11 Ft Loading Height



Towing Assembly

- ✓ **Pintle Hook**
 - ✓ must have cotter or safety pin
- ✓ **Tows up to 17,000 Lbs**
- ✓ **Outlet Receptacles**
 - ✓ 24 Volt System
 - ✓ Located above and left of pintle hook
- ✓ **Air Valves**
 - ✓ Left (Red) for emergency brakes
 - ✓ Right (Blue) for service brakes

Rear Hydraulic Tank & Lines

- ✓ 84 Qts of OE 10w oil
- ✓ "PTO" Driven
- ✓ Powers backhoe



Engine Data & Components

- 6 Cylinder Daimler-Benz
 - 15/40w oil
- Radiator
 - Closed system - fill through coolant bottle
- Power Steering Reservoir
 - OE 10w oil

Air Cleaner

Dry Type



Brake & Clutch Reservoirs



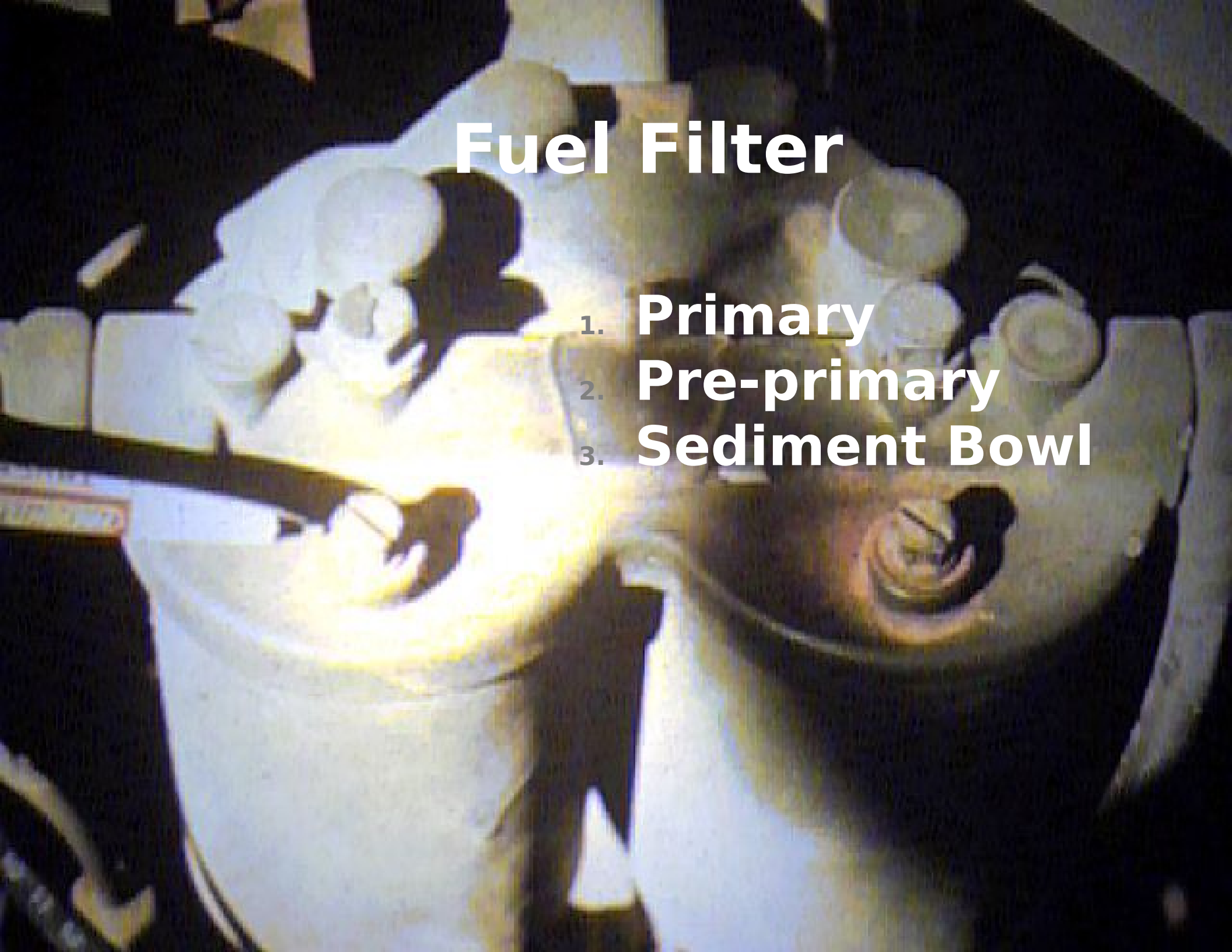
BRAKE



CLUTCH

Fuel Filter

1. **Primary**
2. **Pre-primary**
3. **Sediment Bowl**



Primer Pump & Hour Meter



✓ ***ALL NUMBERS ARE FULL HOURS!!!***

Ether Bottle

32 degrees or less only



Protective Structures

A yellow backhoe loader is shown from a side-front perspective. The machine has a prominent yellow roll-over protective structure (ROPS) cab. The background is a clear blue sky. The text "Protective Structures" is overlaid in large, bold, black letters at the top. On the left side, there is a list of terms with checkmarks: "✓ FOPS", "✓ Falling Object Protective Structure", "✓ ROPS", and "✓ Roll Over Protective Structure".

✓ **FOPS**

✓ **Falling Object Protective Structure**

✓ **ROPS**

✓ **Roll Over Protective Structure**

Tires

- ✓ **170 Lbs**
- ✓ **Michelin Manufactures (the donut man)**
- ✓ **40 psi**
- ✓ **Directional**
 - ✓ **"V" faces inboard**

Review

- 1. Front Bucket**
- 2. Fuel Tank**
- 3. Hydraulic System & Tools**
- 4. Backhoe Attachments**
- 5. Towing Assembly**
- 6. Engine Data and Components**
- 7. Protective Structures**
- 8. Tires**

Dash



Hand & Foot Controls



Cab



Exterior Controls









Backhoe Controls



Stabilizer Controls



STARTING PROCEDURES

F B I L

✓ Fuel

- ✓ 12 o'clock position

✓ Batteries

- ✓ 1 click right

✓ Ignition

- ✓ 2 clicks right

✓ Lights

- ✓ Serv Bright
- ✓ Panel Bright

BATTERIES

IGNITION

• LIGHTS

Review

1. **Controls and Instruments**
2. **Dash (Gauges & Controls)**
3. **Pedals**
4. **Backhoe Controls**
5. **Starting & Stopping Procedures**

Safety

- ✓ **Exhaust**
 - ✓ **Short Stack**
 - ✓ **Long Stack**
- ✓ **Hearing Protection**
- ✓ **No Smoking or Flames**
- ✓ **Seat Belts**

Safety

1. Fuel before Ignition on shut down (FBIL)

2. 3 Points of Contact

3. Eye Protection

4. Creepers when under tractor



Tool Safety

1. **Bystanders at Safe Distance?**
2. **Safety Goggles**
3. **Steel toes**

Tool Safety

1. **Loose Clothing**
2. **Both hands on tool**

Operating Hints

- ✓ **Hillside Operations**
 - ✓ **Place spoils on high side**
 - ✓ **Use stabilizers to level backhoe**
- ✓ **Never dig under stabilizers**

Before You Dig

✓ **Gas Lines?**

Before You Dig

- ✓ **Electric Lines?**
- ✓ **Water (Sewage) Lines?**

Hand Signals

✓ Tractor

- ✓ Start, Stop Engine / Halt / Move Forward, Back

✓ Front Bucket

- ✓ Raise / Lower / Curl / Dump / Level

✓ Backhoe

- ✓ Raise, Lower Stabilizers / Raise, Lower Boom
- ✓ Curl, Dump Bucket / Swing Left, Right



Summary